

Remarks

Claims Rejections - 35 USC §103

Claims 1-4 and 9 have been rejected as obvious from Farrall (GB 2,304,077) in view of Houvener US 5,657,389 and further in view of Pappu (US 6584214). Reconsideration is requested.

When determining obviousness, based on a combination of references the prior art must be considered as a whole, without the benefit of impermissible hindsight vision afforded by the claimed invention. The prior art must be applied in the context of their significance to a technician at the time the invention was made, without knowledge of the solution. Taking into account the evidence of common knowledge and the common sense of the skilled person, there must be some evidence of a suggestion, teaching or motivation that would have led the skilled person to produce the invention as claimed. *In re Translogic Technology Inc.*, 84 USPQ2D 1929, 1937 (Fed. Cir. 2007); *Ortho-Mcneil Pharmaceutical Inc. v. Mylan Laboratories Inc.* 86 USPQ2D 1196, 1201-1202 (Fed. Cir. 2008).

It is impermissible, simply to engage in hindsight reconstruction of the claimed invention, using the applicant's structure as a template, picking and choosing among isolated disclosures in the various documents to supply elements to fill the gaps. MPEP 2142, discussing the legal concept of *prima facie* obviousness articulates how the obviousness determination is to be made:

To reach a proper determination under 35 U.S.C. 103, the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search and evaluate the "subject matter as a whole" of the invention. The tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

The Office Action has clearly failed to "step backward in time" in evaluating the claimed invention without reference to the applicant's disclosure.

Claims 1-4 and 9

Independent claim 1 recites a card transaction verification method utilizing a volume based identifier containing bubbles of random size, shape and arrangement which are clearly perceived in form size and relative position, and which are visually compared by an operator to a transmitted image of the identifier.

Farrall and Pappu both describe volume based identifiers which are viewed with automatic readers, with verification requiring calculation of digital information obtained by the reader compared to stored information from a previous reading or image. Neither document suggest that meaningful comparison between the identifier and a stored can be accomplished visually.

In Farrall, it is necessary to have an Automatic Teller Machine having sensor/detector. See page 9, paragraphs 4 and 5. Moreover the reference to "possibly hundreds of minute metal fragments" quoted in paragraph 7 of the Office Action, itself would clearly lead any reasonable person to conclude that a visual comparison of the Farrall identifier would take so long and/or would be so inaccurate as to be completely impractical.

Pappu teaches a system for authenticating and validating a pattern of immobile features that is similarly complex to Farrall. The document describes use of bubbles injected or stirred into a curing resin as one of the ways of providing a uniquely patterned marker, but it nowhere suggests that the resulting pattern is visually recognizable. *To the contrary*, it teaches to use a digitized reader and expressly teaches that the *simplest* verification involves a complex correlation calculation performed on the digital data:

Most simply, the scattering pattern **112** is simply compared against a an expected pattern stored in analysis module **125**, and a correlation score developed to assess the degree of similarity. Correlation is an analytical technique for comparing two data sets that is useful for finding similar regions in two images. The normalized correlation $\phi_{ab}(x,y)$ of two images described by the arrays $a(x,y)$ and $b(x,y)$, a and b representing some definitive encoded parameter such as luminance, is defined by

$$\phi_{ab}(x, y) = \frac{\int_{-\infty}^{\infty} \int_{-\infty}^{\infty} (a(\xi - \eta) - \bar{a})(b(\xi - x, \eta - y) - \bar{b}) d\xi d\eta}{\left\{ \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} (a(\xi - \eta) - \bar{a})^2 d\xi d\eta \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} (b(\xi - x, \eta - y) - \bar{b})^2 d\xi d\eta \right\}^{1/2}}$$

where \bar{a} is the mean value of $a(x,y)$ and \bar{b} is the mean value of $b(x,y)$.

(Pappu, 4:35-51)

Therefore contrary to the assertions in the Office Action, Pappu actually provides *objective evidence of the non-obviousness* of the claimed invention. Pappu specifically contemplated what would be the simplest method of verification and did not come up with a visual comparison. Pappu's simplest verification teaching *teaches away* from the invention.

Houvenner adds nothing to the analysis that would not have already been taken into account by Farrall and Pappu. In the system of Houvenner, the digital photograph of the person or the signature of the person is displayed on the display means in order for the clerk to compare it with the physical appearance or the signature of the person.

Initially therefore, in Houvenner the card is necessarily linked to a person through its picture or its signature. In the invention as recited in amended claim 1, the link is not to a person, but instead is to the card itself. In the specific context of a credit card transaction the comparison recited in claim 1 protects against a counterfeit card. It does not provide the verification that Houvenner seeks. The claimed method is not intended to, and does not in fact provide "another method of verifying the user to be who he claims to be," as asserted in paragraph 11b of the Office Action.

Furthermore, the visual comparison of a face to a picture is a familiar task for everyone, *i.e.* including specifically Farrall and Pappu. Human brains have brain circuitry specially devoted to facial recognition tasks that is not applicable generally to other pattern recognition.

However, nothing about the identifiers of either Farrall or Pappu implicates facial recognition or suggests that the identifiers can be comparably discriminated by an ordinary transaction clerk.

Likewise, visual comparisons of signatures is a task familiar to clerks processing credit transactions. From their inception credit cards have had been signed on their back and clerks have been instructed to compare that signature with one provided at the time of the transaction. Despite this familiarity, it is notorious that signature comparisons are highly inaccurate. A reasonable person considering the real life experience of signature verification would not think to rely on visual comparison of the much more complex images of the identifiers of Farrall and Pappu as the basis for a transaction authorization. This is the realistic conclusion that results from the "step backward" analysis required in MPEP 2142.

At least for these reasons the visual comparison recited in claim 1 is not one that is obvious from the everyday tasks taught in Houvener.

There is no teaching in any of these documents to use a visual comparison on a volume based identifier on a card as the basis of an authentication. In the context of a credit card transaction, the combined teachings the three documents do not suggest that a visual comparison can be an adequate technique for discriminating enough information from a volume based identifier to provide a suitable basis for a transaction authorization decision. They clearly teach to the skilled person that an automatic reader will be needed at each location where the card will be presented.

Claim 9

The self-generated feature of claim 9 further distinguishes from the art of record.

Bubbles formed mechanically e.g. by injection or stirring, as taught by Pappu (3:50-53) will typically have a distribution that is at least partly a function of reproducible parameter selections. Self-generated bubble patterns are therefore less similar to each other and are more advantageously employed in the visual authentication step.

Respectfully submitted,

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